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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,505	03/28/2001	Satyandra Kumar Gupta	P20380	1575
7055	7590	11/30/2004	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			JONES, HUGH M	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	

2128

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,505

Applicant(s)

GUPTA ET AL.

Examiner

Hugh Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 23-27 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 21-22, 28-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-33 of U. S. Application 09/818, 505, filed 03/28/2001 (Continuation of Application 08/927,291, filed 9/11/1997) are presented for examination.

Claim Interpretations

2. The broadest reasonable interpretation of the claim language has been given to the claims. Applicants appear to be disclosing the generalization of sheet bending to more than one piece - in other words, *scheduling*. Many claims are in fact drawn to generalized scheduling – see claim 16, for example. The general teaching of optimization of manufacturing processes, **including scheduling**, in a multi-constraint environment, and using **expert systems**, was **well known** to those of ordinary skill in the art at the time of the invention.
3. Applicants argued, during prosecution of the parent application, that the Hazama (U. S. Patent 5,822,207) reference qualified as prior art because the patent was not assigned to Amanda America.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-20, 23-27, 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeClair et al. (U. S. Patent 5,485,390 – cited in parent) in view of Wakahara et al. (U. S. Patent 5,029,462 – cited in parent) and the taking of official notice.**

6. LeClair et al. disclose an inductive-deductive process design for machined parts and, in particular, disclose generic details concerning preparing setup planning (including relevant constraints) for machining of materials. A relevant passage (col. 9, lines 21-34) is recited:

“A flow chart for feature sequencing is shown in fig. 18. To determine feature sequences in each setup, we have distinguished between intersecting and non-intersecting features. Intersecting features are nested together, and their sequencing depends on tools, materials, geometric constraints, and manufacturing practice. Intersecting features are constrained sequences (i.e., a limited number of feasible sequences), while non-interacting features are usually unconstrained. Like setup sequencing, to determine a feature sequence, three categories of constraints: material (quality), product (safety), and process (speed), are considered. And, again we have utilized an adaptive evolutionary program to obtain an optimal or near-optimal feature sequence given these three criteria....”

7. LeClair et al. disclose generic details concerning preparing setup planning (including relevant constraints) for machining of materials. LeClair et al. do not

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specifically disclose that the machining involves bending of sheet metal.

However, LeClair et al disclose (col. 2, lines 58-62):

“The application is the sequencing of material removal setups, features and operations but the method is applicable to any process design problem which involves both material, geometric and/or resource constraints.”

8. Wakahara et al. disclose a method of bending a workpiece including setting a bending process and preparing bending data. Details are provided concerning the specifics of sheet metal bending. See the entire disclosure.

9. Furthermore (from col. 3, lines 35-56):

“The inductive-deductive coupling involving the use of evolutionary programs can be applied to any and all process design tasks which involve mechanical parts of all types of materials using a variety of processes.”

10. In any case, official notice is taken it would have been obvious to one of ordinary skill in the art at the time of the invention that the bending of sheet metal is a standard and well known machining process - and thus that the disclosure of LeClair et al. would be relevant as applied to sheet metal bending. Furthermore, Leclair et al. do not explicitly disclose discloses a single part which is to be processed. Claims 1-2 and 10-11 disclose multi-part setup - however, official notice is taken that it would have been obvious to one of ordinary skill in the art at the time of the invention to generalize setup planning for one piece of sheet metal to more than one piece of sheet metal. **In any event, LeClair et al. disclose families of parts - see discussion below.**

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As per setup and constraints; see L: fig. 2, 4, 9-14, 17-18; col. 1, line 30 to col. 2, line 12; col. 2, line 41 to col. 3, line 33; col. 6, line 52 to end of col. 10; appendix;

As per setup and constraints and a family of parts; see L: fig. 2, 4, 9-14, 17-18; col. 1, line 30 to col. 2, line 12; col. 2, line 41 to col. 3, line 33; col. 6, line 52 to end of col. 10; appendix; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per locating and tooling stages; see L: fig. 2, 4, 6, 11, 17-20; col. 2, lines 3-12; col. 5, lines 45-50; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55;

As per locating and tooling stages and a family of parts; see L: fig. 2, 4, 6, 11, 17-20; col. 2, lines 3-12; col. 5, lines 45-50; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per constraints and positioning; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55;

As per constraints and positioning and a family of parts; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per tolerance; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55;

As per tolerance and a family of parts; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per tooling parameters and clearance; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55;

As per tooling parameters and clearance and a family of parts; see L: fig. 4, 17-20; col. 7, lines 16-41; col. 8, lines 30-46; col. 9, lines 6-55; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-

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54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per constraints and an intermediate shape of the part; see L: fig. 11-12, 17-18, 20; col. 10, lines 27-41;

As per constraints and an intermediate shape of the part and a family of parts; see L: fig. 11-12, 17-18, 20; col. 10, lines 27-41; Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

As per constraints and a geometric model of the intermediate shape of the part and part/tool intersections; see L: fig. 11-12, 17-18, 20; col. 7, lines 16-41; col. 10, lines 27-41;

As per constraints and a geometric model of the intermediate shape of the part and part/tool intersections and a family of parts; see L: fig. 11-12, 17-18, 20; col. 7, lines 16-41; col. 10, lines 27-41;

Regarding family of parts see L: abstract; figs. 2, 6, 12, 16, 21; col. 2, lines 3-12 and 41-54; col. 3, lines 1-17; col. 5, lines 37-50; col. 6, line 55 to col. 7, line 41 [discussion of use of experience obtained via previous work on similar designs]; col. 8, lines 12-18 [clusters of similar designs].

Allowable Subject Matter

11. Claims 21-22, 28-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments, filed 9/3/2004, have been carefully studied, but they are not persuasive.

13. Applicant's remarks relating to the IDS are noted. The translated abstract has been considered and initialed.

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14. The double patenting rejections are withdrawn in view of the submission of the Terminal Disclaimer, which was submitted in response to the double patenting rejection.

15. The Bourne and Hazama rejections are withdrawn because they do not expressly disclose multi-part set-up.

16. Applicant's arguments, filed 9/3/2004 related to the LeClair rejection, have been carefully studied, but they are not persuasive.

17. Applicant's arguments pertaining to Office Notice are circular in so far as they attempt to conclude that the Office takes somehow improperly takes official "... at least because the claimed features are not present in the prior art."

Applicants, respectfully, misunderstand the purpose of Official Notice.

Furthermore, Applicant's have not properly challenged the taking of the Official Notice. See MPEP 2144.03.

18. Furthermore, Applicants have not addressed the specifics of the prior art rejection and instead, appear to rely on abstract and hypothetical arguments.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

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period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

.21. Any inquiry concerning this communication or earlier communications from the examiner should be:

directed to:

Dr. Hugh Jones telephone number (571) 272-3781, Monday-Thursday
0830 to 0700 ET, **or**

the examiner's supervisor, Jean Homere, telephone number (571) 272-
3780. Any inquiry of a general nature or relating to the status of this
application should be directed to the Group receptionist, telephone
number (703) 305-3900.

mailed to: Commissioner of Patents and Trademarks

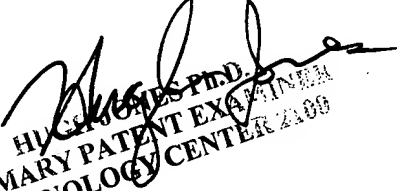
Washington, D.C. 20231

or faxed to: (703) 308-9051 (for formal communications intended for entry)

or

(703) 308-1396 (for informal or draft communications, please label
"PROPOSED" or "DRAFT").

Dr. Hugh Jones


HUGH JONES, PhD
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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Primary Patent Examiner

November 28, 2004